

# HANGER WITH CLIPS AND METHOD OF MANUFACTURING THE SAME

## BACKGROUND OF THE INVENTION

### 5 1. Field of the Invention

This invention principally relates to a hanger with clips.

### 2. Description of the Related Art

10 A general hanger having clips that grip garments or the like has a plastic clip (i.e., synthetic-resin-made clip), which is elastically urged in a direction in which gripping parts of clip pieces are pressed with a metallic, U-shaped spring, near each end of a hanger member held horizontally. Garments are gripped and hung with this plastic clip.

15 Moreover, when garments are delivered from a manufacturer to a trading company or a retail store, they are delivered in a state in which the garments are hung by a hanger. Recently, according to the Product Liability Law, metal detectors confirm that sewing needles or the like are not left  
20 in garments, and, after that, garments have been delivered. However, in a plastic clip that is elastically urged in a direction in which gripping parts of clip pieces are pressed with a metallic, U-shaped spring, this metallic spring will be detected by the metal detector.

25 Therefore, in order to develop a countermeasure to the metal detector, prior to the present invention, the present

inventor has proposed Japanese Patent No. 2956956 in which an elastic plastic spring folded to have a "U" shape that is made of a composite material composed principally of a polycarbonate resin is attached to plastic clips, and a hanger is provided  
5 with the clips that give careful consideration to safety so that, when the plastic spring is broken, an operator can be prevented from being injured by scattered fragments thereof.

However, the hanger with clips proposed in this patent has a drawback in the fact that the main part of the hanger  
10 and the clip part thereof must be individually constructed, and a plurality of expensive molds for these parts must be constructed, and therefore initial costs rise.

Another drawback resides in the fact that the number of component parts increases because component parts of the hanger  
15 with clips are produced from a plurality of molds.

Still another drawback resides in the fact that much time is needed for assembly proportionately with an increase in the number of component parts, and manufacturing costs rise.

Still another drawback resides in the fact that, if the  
20 hanger is constructed of many component parts, manufacturing operations must be stopped when a shortage of only one of the component parts occurs.

#### SUMMARY OF THE INVENTION

25 The present invention has been made in consideration of the aforementioned drawbacks. It is therefore an object of

the present invention to provide a hanger with clips and a method for manufacturing a hanger capable of reducing initial costs by minimizing the production of expensive molds, capable of improving productivity by reducing the number of independent  
5 component parts, and capable of preventing the occurrence of an excess or a deficiency of component parts.

In order to achieve the object, the hanger with clips according to the present invention is a hanger with clips in which a hook is provided at the center thereof, and clips are  
10 provided at both ends, respectively, of an arm part extending rightward and leftward from the center, and is characterized in that the clip consists of a pair of clip pieces, and one of the clip pieces is molded integrally with the arm part, and the other clip piece is molded in a state of being joined to  
15 the one of the clip pieces.

The hanger with clips according to another aspect of the present invention is characterized in that the clip is a plastic clip that can be examined by a meter-reading device, in which a clip piece having a gripping part at an end thereof is caused  
20 to face another clip piece having a gripping part at an end thereof, and a plastic spring that is folded to have a "U" shape between the clip pieces is provided, and the gripping parts of both clip pieces are elastically urged in directions in which the gripping parts are pressed against each other by an elastic  
25 force of the plastic spring, and is characterized in that a hooking part is formed on an inner surface of a tip of the

plastic spring; the clip piece includes a catching part on which the hooking part is hooked and a scatter-preventing part that covers a plastic spring part that is a folded part from the catching part; a space is formed for inserting the tip of the  
5 spring between the catching part and an end of the scatter-preventing part facing the catching part; and an end of the catching part on the side of the scatter-preventing part and the end of the scatter-preventing part on the side of the catching part are formed not to overlap with each other in a  
10 direction perpendicular to a sliding direction of a mold used to mold the clip piece.

A method for manufacturing a hanger with clips according to the present invention is characterized in that a hanger blank (i.e., a semi-finished hanger) is formed such that one clip  
15 piece of a clip is molded integrally with an end of an arm part extending rightward and leftward from a hook part formed at the center of the hanger blank; another clip piece is joined to an outer part of the one clip piece through a joining piece; and the clip is formed such that the clip pieces of the hanger  
20 blank are caused to face each other.

As described above, according to the present invention, one clip piece of a clip consisting of a pair of segments formed at each of both ends of an arm part extending rightward and leftward from a hook formed at the center of a hanger is molded  
25 integrally with the arm part, and the other clip piece is molded in a state of being joined to the one clip piece, and this clip

piece is attached to the clip piece molded integrally with the arm part so as to form the hanger with clips. Therefore, the arm part and the clip pieces can be molded by a pair of molds.

Therefore, advantageously, the number of expensive molds  
5 can be reduced, and initial costs thereof can be reduced.

Further, when molded, the arm part and the one clip piece are molded integrally with each other, and the other clip piece is molded as a set in a state of being joined to the one clip piece, so that a plurality of hanger bodies can be molded by  
10 use of one surface of a mold. Therefore, advantageously, all that is needed is to meet the number of these with the number of springs, and productivity can be improved by continuous production without stopping production because of an excess or a deficiency of components.

Furthermore, advantageously, the assembly of the hanger  
15 with clips can easily and quickly be performed by causing the one clip piece molded integrally with the arm part to face the other clip piece and by providing a spring between the clip pieces. As a result, productivity is improved, and  
20 manufacturing costs can be reduced.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a hanger with clips according to the present invention.

25 Fig. 2 is a perspective view of a hanger blank of the hanger with clips according to the present invention.

Fig. 3 is a side view of the hanger with clips according to the present invention.

Fig. 4 is a longitudinal side view of a clip part of the hanger with clips according to the present invention.

5        Fig. 5 is a longitudinal exploded side view of a clip part of the hanger with clips according to the present invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

10        A hanger with clips according to the present invention will be hereinafter described with reference to the drawings. Fig. 1 is a perspective view of the hanger with clips, in which reference numeral 1 designates the whole of the hanger.

      This hanger 1 with clips includes a hook part 2 shaped  
15    like a question mark, an arm part 3 extending rightward and leftward from the lower part of the hook part 2 substantially straight, and clips 4 and 4 provided at both ends, respectively, of the arm part 3.

      As shown in Fig. 2, the hook part 2, the arm part 3, and  
20    one 4a of the clip pieces of the clip 4 described later are integrally made of synthetic resin. The other clip piece 4b is disposed outside the clip piece 4a and is molded while being joined to the clip piece 4a through a thin joining piece 5.

      Next, the clip 4 will be described.

25        This clip 4 is used to principally grip and hang garments and is made of synthetic resin so that the clip pieces 4a and

4b have almost the same shape although the clip pieces 4a and 4b differ from each other in a fulcrum 13. The clip pieces 4a and 4b as a pair are caused to face each other, and a plastic spring (i.e., synthetic-resin-made spring) 6 is attached  
5 between the clip pieces 4a and 4b.

As shown in Fig. 3, a mounting part 8 of the clip piece 4a formed integrally with an end of the arm part 3 is displaced leftward in the figure so that a center G1 of the arm part 3 coincides with a center G2 of a gripping part 7 of the clip  
10 4 when seen from the side.

The plastic spring 6 is made of synthetic resin of a composite material composed principally of polycarbonate resin. As shown in Fig. 4 and Fig. 5, the plastic spring 6 shaped like a "U" is thick in its folded part 6a, and gradually  
15 becomes thinner as it approaches its end 6b. The plastic spring 6 has a hooking part 9 protruding like a crook on the inner surface of each end thereof.

On the other hand, as shown in Fig. 4 and Fig. 5, each of the clip pieces 4a and 4b between which the plastic spring 6 is attached includes a gripping part 7 that grips garments or the like at their lower end, a catching part 10 that catches the hooking part 9 of the plastic spring 6 substantially at its center, and an operating part 11 used to open the plastic  
20 clip 4 against the tension of the plastic spring 6 at the other  
25 end.

A scatter-preventing part 12 is provided from the

operating part 11 of the clip pieces 4a and 4b to the vicinity of an end 10a of the catching part 10. A space 16 for inserting the tip of the spring 6 is formed between the end 10a of the catching part 10 and an end 12a of the scatter-preventing part 12 facing the end 10a of the catching part 10.

A fulcrum 13 formed by convex and concave parts is provided at the intermediate point between the operating part 11 and the gripping part 7. A cushion 14 made of a sponge or the like is attached to the gripping part 7 formed at the end of the clip pieces 4a and 4b.

As shown by the imaginary line of Fig. 2, the gripping part 7 may be formed with a continuous concavo-convex part 15 instead of the cushion 14, or, as shown by the alternate long and short dash line of Fig. 2, the gripping part 7 may be formed with upper and lower projections 18 differing in phase, or the gripping part 7 may be formed with interspersed protrusions not shown.

The scatter-preventing part 12 extends from the operating part of the clip pieces 4a and 4b to the vicinity of the hooking part 9 of the plastic spring 6, and, as shown in Fig. 5, a gap is provided between the end 12a of the scatter-preventing part 12 and the end 10a of the catching part 10 so that both the ends 12a and 10a do not overlap with each other in a direction Y perpendicular to a sliding direction X of molds (not shown) used to mold the clip pieces 4a and 4b.

Since interference of the molds with each other is



prevented by constructing the clip pieces 4a and 4b so that the end 12a of the scatter-preventing part 12 and the end 10a of the catching part 10 do not overlap in the direction Y as mentioned above, the hook part 2, the arm part 3, and the end  
5 of the arm part 3 can be molded integrally with one clip piece 4a as shown in Fig. 2, and a hanger blank (i.e., a semi-finished hanger) 20 can be formed in a state in which the other clip piece 4b joined to the clip piece 4a through the thin joining piece 5 is disposed outside the clip piece 4a, and therefore  
10 the hanger blank 20 can be formed merely by a pair of molds.

Further, advantageously, since a mold for molding the hanger blank 20 does not use cutting dies as can be understood from Fig. 2, a plurality of shapes for the hanger blank 20 can be formed in one surface of the mold.

15 In order to assemble the hanger blank 20 molded by a pair of molds as mentioned above, the other clip piece 4b joined through the joining piece 5 is first bent at the part of the joining piece 5, and the fulcrum 13 formed by a concavo-convex part is fitted to the clip piece 4a formed integrally with the  
20 arm part 3 so as to face the clip piece 4a.

Thereafter, the hooking part 9 of the plastic spring 6 is hooked on the catching part 10 of the clip pieces 4a and 4b.

As a result, assembled is the hanger 1 provided with the  
25 plastic clips 4 in which the pair of clip pieces 4a and 4b are elastically urged in directions in which end faces of the

cushion 14 of the gripping part 7 are pressed against each other by the elasticity of the plastic spring 6.

The hanger 1 with clips assembled in this way can be examined through a meter-reading metal detector (not shown), for example, while garments are being gripped and hung by the gripping part 7 of the plastic clip 4, because the plastic clip 4 is entirely formed of synthetic resin even when garments or the like are gripped and hung by the gripping part 7 of the plastic clip 4.

There is a case in which the plastic spring 6 of the clip 4 is sometimes broken at its folded part when the hanger 1 with clips is used in this way, and fragments of the plastic spring 6 that have been broken are scattered as a result. However, since the scatter-preventing part 12 catches the fragments, the scatter-preventing part 12 can prevent a person from being injured in the hand or in the face by scattered fragments of the plastic spring 6.

In the aforementioned embodiment, the spring 6 is made of synthetic resin so that the hanger 1 can be examined through a meter-reading device. However, the spring 6 can, of course, be made of metal if the hanger is used only for display without being examined through the meter-reading device.

Additionally, the joining piece 5 through which the pair of clip pieces 4a and 4b are joined to each other in the aforementioned embodiment can, of course, be separated or be cut from its root when assembled.